

WHAT IS CLAIMED IS:

SUB A<sup>36</sup> 1. A communication system in which a transmitting station and a receiving station are communicably connected through a transmission path, and the receiving station reserves a bandwidth used in data communication for the transmitting station in advance,

5 wherein

said transmitting station transmits a reservation request packet for bandwidth reservation to said receiving station when data to be transmitted is generated,

said receiving station

10 reserves the bandwidth in response to the reservation request packet from said transmitting station, and

transmits a communication reservation packet for informing said transmitting station of the reserved bandwidth,

said transmitting station

15 creates a data packet according to the generated data,

and

transmits the created data packet through the bandwidth informed by the communication reservation packet from said receiving station, and

20 said receiving station

stores a valid period of the bandwidth reserved for said transmitting station, and

voluntarily and repeatedly transmits the

communication reservation packet to said transmitting station  
25 during the stored valid period.

2. The communication system as claimed in claim 1, wherein  
an initial value of the valid period stored for said transmitting  
station is predetermined, and

said receiving station further  
5 shortens the stored valid period with given timing,  
lengthens the stored valid period on reception of the  
data packet from said transmitting station,  
deletes the valid period when the valid period is  
equal to a predetermined reference value, and  
10 voluntarily and repeatedly transmits the  
communication reservation packet to said transmitting station as  
long as the valid period is stored.

3. The communication system as claimed in claim 2, wherein  
said transmitting station further sets an identifier assigned  
thereto to the reservation request packet, and

said receiving station further  
5 stores the identifier set to the reservation request  
packet transmitted from said transmitting station together with  
the initial value of the valid period, and  
when deletes the valid period, deletes the stored  
identifier together therewith.

4. The communication system as claimed in claim 1, wherein said receiving station further transmits, with given timing, a request inquiry packet for allowing said transmitting station to transmit the reservation request packet, and

5        said transmitting station further transmits the reservation request packet in response to the request inquiry packet transmitted from said receiving station.

5. The communication system as claimed in claim 4, wherein said receiving station further sets, to the request inquiry packet, a probability that said transmitting station can transmit the reservation request packet, and

5        said transmitting station further transmits the reservation request packet according to the probability value included in the request inquiry packet transmitted from said receiving station.

6. The communication system as claimed in claim 5, wherein, when said receiving station detected a communication collision on said transmission path, the probability value set to the request inquiry packet is relatively low.

7. The communication system as claimed in claim 5, wherein, when said receiving station correctly received the reservation request packet from said transmission path, the probability value

set to the request inquiry packet is relatively high.

8. The communication system as claimed in claim 5, wherein, when no signal arrives the receiving station from said transmission path for a given time period, the probability set to the request inquiry packet is relatively high.

9. The communication system as claimed in claim 2, wherein said receiving station further changes a time interval between two communication reservation packets according to the valid period.

10. The communication system as claimed in claim 1, wherein said receiving station further changes a time interval between two communication reservation packets according to a transfer rate required by said transmitting station.

11. The communication system as claimed in claim 1, wherein, when no signal arrives the receiving station from said transmission path for a given time period, said receiving station further judges that the communication reservation packet can be  
5 transmitted.

12. The communication system as claimed in claim 1, wherein said receiving station further judges that the communication

reservation packet can be transmitted on reception of the data packet from said transmission path.

13. The communication system as claimed in claim 1, wherein said transmitting station further judges that the reservation request packet can be transmitted on reception of the data packet or the communication reservation packet from said transmission  
5 path.

14. The communication system as claimed in claim 1, wherein, when no signal arrives the receiving station from said transmission path for a given time period, said transmitting station further judges that the reservation request packet can  
5 be transmitted.

15. The communication system as claimed in claim 1, wherein said transmitting station further judges that the data packet can be transmitted on reception of another data packet from said transmission path.

16. The communication system as claimed in claim 1, wherein said transmitting station further  
measures a lapse of time after transmitted the data packet,  
and  
5 when the lapse of time becomes equal to a reference value

relevant to the valid period, judges that the reservation request packet can be transmitted.

Add P5